

REMARKS

The Office Action notes that claims 1, 2, and 4-16, 21-22 are pending in the application. The applicants hereby amend claim 1 and add claims 23-26 to the application. Support for the amendments and new claims can be found throughout the originally filed specification (see e.g. ¶¶ 0036, 0042, 0044, 0045). Therefore, no new matter has been added.

Interview Summary

The applicants thank Examiner Zervigon for the courtesy of allowing an examiner interview on June 8, 2005. However, the applicants wish to point out an inaccuracy in the Examiner's interview summary, which the USPTO mailed on June 10, 2005.

In the Interview Summary, the Examiner states that "further discussion was held on the Examiner's rejection of claims 12-13 under Li." This statement is incorrect. During the June 8 interview, discussion was held regarding the rejection of claims 11-12 under the combination of Moore (patent no. 5,710,407), Voll (patent no. 4,439,401), and Li (patent no. 5,772,771). Specifically, the undersigned explained to Examiner Zervigon that the Office Action of January 19, 2005 provides no rationale for the rejection of claims 11-12. Put simply, other than stating that claims 11-12 were rejected under the aforesaid combination, the Office Action is silent with respect to these claims. The Office Action applies no specific teachings of the references to claims 11-12 and provides no motivation for combining or modifying the references to result in claims 11-12. Accordingly, the undersigned requested that the Examiner issue a supplemental office action addressing claims 11-12. The examiner refused.

During the remainder of the interview, the undersigned and the Examiner Zervigon discussed whether or not the cited references disclosed all of the limitations of the claims that the Office Action of January 19, 2005 addresses. No agreement was reached.

35 USC § 103 Rejections

Independent claim 1 stands rejected under 35 USC § 103 as being unpatentable over Moore (patent no. 5,710,407) in view of Voll (patent no. 4,439,401).

Independent claim 1, as amended, includes “a thin film distributor, the thin film distributor including a first external surface having a cylindrical shape, a second external surface having a frustroconical shape, and a plurality of injection holes formed in the distributor that are shaped and adapted to inject the source element into the reaction chamber in a manner sufficient to allow formation of a thin film.”

As the Office Action acknowledges, Moore does not disclose a distributor including a first external surface having a cylindrical shape, a second external surface having a frustroconical shape, and a plurality of injection holes formed in the distributor. (January 19, 2005 Office Action, page 2, section viii.) Accordingly, the Office Action cites Voll as disclosing such a distributor and asserts that it would be obvious to combine the apparatus of Moore with the nozzle of Voll shown in Fig. 4. The applicants disagree for two reasons.

First, independent claims 1 is allowable over the combination of Moore and Voll because even if the references were combined, which the Applicants do not believe is possible, the claimed inventions would not result. Voll does not disclose a distributor for forming a thin film. Voll discloses a nozzle for spraying carbon black feedstock into a reaction chamber (Voll at col. 3, lines 39-41). This is a fundamentally different process than forming a thin film on a substrate. It follows that the nozzle of Voll is not a thin film distributor and does not have injection holes shaped and adapted to inject the source element into a reaction chamber in a manner sufficient to allow formation of a thin film. Therefore, assuming *arguendo* that Moore and Voll were combined, the combination would not render claim 1 obvious because all of the limitations of claim 1 would not be present.

Second, independent claim 1 is also allowable over Moore and Voll because one of ordinary skill in the art would not combine the nozzle of Voll with the rapid thermal processing apparatus for processing semiconductor wafers disclosed by Moore. The nozzle of Voll is designed and adapted for a completely different purpose (i.e. spraying carbon feedstock) and is not suited for used in semiconductor wafer processing apparatus. Using the nozzle of Voll in the apparatus of Moore would ruin the intended purpose of the Moore apparatus. Thus, the combination of Moore and Voll is improper.

Independent claim 23 discloses an apparatus for forming a thin film. The apparatus comprises: A reaction chamber having a top portion, a sidewall portion and a bottom portion; a gas injector penetrating the top portion and letting a source element pass therethrough; a means forming a thin film on a substrate; and a substrate heating member positioned in the reaction chamber. The applicants respectfully submit that independent claim 23 is allowable because, for the aforementioned reasons, the Moore and Voll do not, either alone or in combination, disclose a means forming a thin film on a substrate.

The remaining claims are dependent, either directly or indirectly, on claim 1 or claim 23. Therefore, the dependent claims are allowable for at least the reasons given with respect to claims 1 and 23. In addition, the applicants believe that claim 11 is allowable because none of cited references disclose two distributors, wherein an axis of the second distributor forms an angle less than 90 degrees with an axis of the first distributor when the first and second distributors are disposed at the top portion of the reaction chamber.

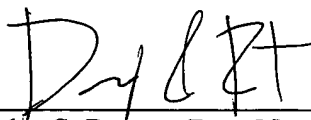
Conclusion

In view of the aforesaid, the applicants respectfully submit that the present application is in condition for allowance. Favorable reconsideration is requested.

Respectfully Submitted,

Date: _____

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